Technical Data Management Business Problems

The Army faces the following business problems in the area of Technical Data:

1. Reprocurements and spares acquisitions often are delayed because the Army must re-engineer or re-validate product data for the following types of reasons:
    - Data cannot be found or may be the wrong version,
    - Data is poor quality because it was created from paper rather than electronically,
    - Data is missing the critical underlying design detail or "intelligence" (i.e., the data could not be retained in its native format or in a sufficiently robust neutral format due to current system inability to handle intelligent data), or
    - Data lacks the original supporting analyses (e.g., stress analyses and test results) which cause reanalysis to be performed when design changes are suggested.
2. Army engineering data is stored in many repositories: JEDMICS, local command or program repositories, and contractor repositories. With acquisition reform, the Army will own less data and the problem will become more severe as the Army becomes more dependent on contractors for access to data they retain. The Army currently lacks the ability to easily locate and access data from multiple repositories for the following reasons:
    - Program unique data management architectures, each with its own technologies, processes, and data formats;
    - Cultural concerns and lack of established processes for operating in a collaborative engineering data environment (e.g., reluctance to make work-in-progress available in a collaborative environment, lack of collaboration supporting software); and
    - Security concerns regarding multi-site transmission of sensitive/classified data.
3. The configuration management and storing of official engineering data is done by different systems (TD/CMS and JEDMICS respectively). Discrepancies occur as the configuration management system and the repository system get out of synchronization. This results in users retrieving the wrong data or being unable to retrieve the right data.
4. Numerous communities, which are geographically and organizationally dispersed, must have ready access to supporting engineering data when evaluating the impacts of engineering change proposals (ECPs) and when participating in integrated product development. Today, it is difficult and time consuming to access that data for the following reasons:
    - Insufficient speed and bandwidth of connectivity to electronic source of data,
    - Limited access to repositories in which data is stored,
    - Multiple systems are required to retrieve data (e.g., no single, common method of locating and retrieving data means an ECP evaluator or a member of multiple IPTs may require access to and know-how about multiple systems),
    - Current ECP tracking systems are separate from the CM system which causes manual conversion of data,
    - Incompatible or unavailable data creation and viewing software, and
    - Lack of simultaneous access by multiple users to engineering data, particularly for view only or view & markup functions.

5. Army budgets and staff allotments are shrinking. Downsized organizations/personnel need to be able to generate and process (e.g., use) engineering data more efficiently.
6. The Army is a diverse environment with many commands and organizations with different mission requirements. They have different infrastructures and processes which can be expected to persist in the near-term.

Impacts of Technical Data Management Business Problems

The above problems cause the following negative cost and schedule impacts to PMs and MSCs:

1) Reprocurement cycle times are excessive.
2) Engineering design and redesign times are excessive.
3) Design change time is excessive.
4) Document delivery time is excessive.
5) Production costs are excessive.
6) Design errors occur frequently.
7) Engineering design data is regenerated, not reused.
8) Engineering data content is lost and quality is degraded.
9) Engineering data is difficult and time consuming to locate and retrieve.
10) Distributed, collaborative processes are inhibited by inaccessible, incorrect, or untimely data.

It was these problems and their associated impacts that led the CG, AMC and the DCSRDA to direct that a new automated configuration management system be implemented throughout AMC. The new system would make use of commercial-off-the-shelf technology to improve AMC's data management capabilities with a view towards meeting the needs of the next century.